REMARKS

Claims 1-16 were previously canceled, claims 17-31 have been withdrawn, and claims 37-41 have been added. As noted above, claims 32-41 are presently pending in this application.

The status of the application in light of the Office Action mailed 29 December 2004 is as follows:

(A) The Restriction Requirement issued 4 October 2004 has been made final.

(B) Claims 32-36 were rejected under 35 USC § 103(a) as being anticipated by US Patent No. 5,764,071 ("Chan") in view of either US Patent No. 4,055,806 ("Patel") or US Patent No. 5,523,695 ("Lin").

A. Restriction Requirement Made Final

The applicant's representative traversed the Restriction Requirement issued 4 October 2004 and made a provisional election of claims 32-37. In the present Office Action, the Examiner has made the Restriction Requirement final. Accordingly, claims 17-31 have been withdrawn without prejudice to consideration of these claims upon allowance of a generic claim. The foregoing election is made with the understanding that the Examiner and the U.S. Patent and Trademark Office are now bound to the finding of non-obviousness between each of the species. Upon allowance of the generic claims, the applicant requests consideration of claims to additional species which are written in dependent form or which otherwise include all the limitations of the allowed generic claims.

In the present Office Action the Examiner asserts that claims 17, 24, and 32 belong to different species because they each present method steps that are conducted in distinct sequences from each other. The undersigned does not concede that the elements of the methods claimed in claims 17, 24, and 32 (or in any method claims in the present application) must be performed in a specified sequence.

B. Response to Section 103(a) Rejection

Claims 32-26 were rejected under 35 USC § 103(a) as being anticipated by Chan in view of either Patel or Lin. As described below, the rejection of claims 32-36 should be withdrawn because Chan, Patel, and Lin fail to teach or suggest all of the features of these claims.

(1) Claim 32 is Directed to a Method of Making a Testing Device that Includes Configuring at least One Pin Receptacle to be Operatively Couplable to at least One of Multiple Second Contacts and to Receive Pins of an Electrical Socket Device

Claim 32 is directed toward a method of making a testing device that includes coupling a load board to a base member. The method further includes removably coupling multiple electrically conductive first contacts to the base member. The first contacts have first portions that are thereby operatively coupled to the load board and second portions that are operatively couplable to multiple second contacts. The method still further includes operatively coupling the second contacts to the second portions of the first contacts, and configuring at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical socket device.

(2) Chan Discloses an Apparatus to Test an Electronic Module Mounted to a Printed Circuit Board

The invention of Chan provides a method and system for testing an electronic module mounted on a Printed Circuit Board (PCB). (Column 2, Lines 30-34; column 1, line 64 – column 2, line 1.) More particularly, the invention of Chan provides a method and system for testing an electronic component on a PCB without having to mount the electronic component on a specialized PCB board. (Column 1, lines 54-61.) According to Chan, this method prevents the introduction of "undesirable electrical characteristics" that are associated with testing the electronic component on a different structure (e.g., a prototype or specialized PCB) than the structure that will presumably support the component in service. (Column 1, lines 45-61) Accordingly, the system in Chan couples the electronic device mounted on a PCB to an analyzing system by clamping one or more cables to one or more interposers, which interface with the bottom signal

pads of the PCB on which the electronic device is mounted. (Column 2, line 30 – column 3, line 41). Solder balls appear to connect the electronic device to the PCB. (Figures 1 and 4.) The other end of the cable(s) is/are clamped to one or more interposers, which interface with an interface card. (Column 2, line 30 – column 3, line 41). The interface card in turn, interfaces with the analyzing system. (Column 2, line 30 – column 3, line 41).

(3) Patel Discloses an Integrated Circuit Substitution Device with a Test Socket Connected to Wires

Patel discloses an integrated circuit substitution device comprising a pincer-like contacting assembly which connects to the terminals of an existing integrated circuit. (Abstract.) Patel discloses a test socket (11) having opening (17) into which an unknown integrated circuit is inserted. (Column 3, lines 4-6.) In Patel the test socket (11) is mounted to a printed circuit board (12). (Column 2, lines 62-68.) "Rigid wires 10' connect to one row of terminals of integrated circuit test socket 11" and flexible wires (13) are connected to the other row of terminals of the integrated circuit test socket (11). (Column 2, lines 62-68.) Patel does not appear to disclose a pin receptacle to receive pins of an electrical socket device or pins of an electrical socket device.

(4) Lin Discloses an Apparatus for Placing a Die of a Die-Down Configured Integrated Circuit Package in an Upright Orientation

Lin discloses an apparatus and method for placing a die of a die-down configured integrated circuit package in an upright orientation. (Abstract.) A first board has electrical receptors peripherally surrounding a first hole formed through the first board. (Abstract.) A die-down configured integrated circuit package is inserted into a test socket so that the die is located over a second hole formed through the bottom of the test socket. (Abstract; column 4, lines 22-33.) The test socket is positioned on the first board such that the pins of the test socket engage the electrical receptors and such that the exposed die of the die-down configured integrated circuit package is disposed over the first hole. (Abstract; column 4, lines 10-21.) The first board is coupled to a second board via a flexible connector and is folded over such that the exposed die is

visible through the first hole in the first board and the second hole in the test socket. (Abstract; column 3, line 65 - column 4, line 49.) The electrical connecting pins of the second board are then inserted into a standard swap block. (Abstract; column 3, line 65 - column 4, line 49.)

(5) Chan, Patel, and Lin Fail to Disclose, Among Other Features, a Method of Making a Testing Device that Includes Configuring at least One Pin Receptacle to be Operatively Couplable to at least One of Multiple Second Contacts and to Receive Pins of an Electrical Socket Device

The rejection of independent claim 32 should be withdrawn because (a) the basis for combining Patel or Lin with Chan set forth in the Office Action is without merit, and (b) the Chan does not disclose all of the features attributed to it by the Office Action. The Examiner suggests that clamping cable signal pads (110b and 410b) to interposers (108 and 412) in Chan is equivalent to "operatively coupling the second contacts to the second portions of the first contacts," as recited in claim 32. Additionally, the Examiner suggests that the bottom signal pads of the PCB and the portion of the PCB where the electronic module is mounted, along with the electronic module, is equivalent to configuring at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical device. The Examiner admits that Chan does not show an electrical socket device, but suggests that it would have been obvious to combine the teaching of Patel or Lin to modify Chan to use a socket to hold the electronic device of Chan. For the reasons explained below, there is no motivation to combine Chan with Patel or Lin.

First, there is no motivation to combine Patel and/or Lin with Chan because Chan teaches away from using an electrical socket device to hold the electronic module during testing. Chan provides a method and system for testing an electronic component on a PCB without having to mount the electronic component on a specialized PCB board to avoid undesirable electrical characteristics that are associated with testing the electronic component on a different structure than the structure that will presumably support the component in service. More particularly, the stated purpose for the apparatus in Chan is to test the electrical characteristics of an

electronic module mounted to a printed circuit board, not to test an electronic module alone. Chan accordingly, teaches away from separating the electronic module from the PCB and/or placing the module in an electronic socket device for testing. Therefore a person skilled in the art would not combine the socket of Lin or Patel with the apparatus or Chan.

Second, the rejection of claim 32 should be withdrawn because Chan does not disclose all of the features attributed to it in the Office Action. For example, Chan fails to teach or suggest configuring at least one pin receptacle to be operatively couplable to at least one of the second contacts and to receive pins of an electrical device. Chan has an electronic device mounted on a PCB, apparently with solder balls. The PCB may have bottom signal pads and may have connection or contact points where the electronic device is mounted, but Chan fails to teach or suggest a pin receptacle to receive pins of an electrical device and to be operatively couplable to at least one of the second contacts. Therefore, the Examiner has failed to provide a prima facie case of obviousness based on the applied references.

For at least these reasons, Claim 32 is in condition for allowance. Claims 33-36 depends from claim 32. Accordingly, for the reasons discussed above and for the additional features of these claims, claims 33-36 are also in condition for allowance.

New claim 37 includes all the features of claim 32 and additionally recites "the electrical socket device being configured to receive a device to be tested." Accordingly, new claim 37 is in condition for allowance. Claims 38-41 depend from claim 37. Accordingly, claims 38-41 are also in condition for allowance.

In view of the foregoing, the pending claims comply with 35 USC § 112 and are patentable over the applied art. The applicant accordingly requests reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-6477.

No fees are believed due with this communication. However, the Commissioner is hereby authorized and requested to charge any deficiency in fees herein to Deposit Account No. 50-0665.

Respectfully submitted,
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